

Table 1. Mean percentage (se) of *Curculio caryae* larvae infected with *Beauveria bassiana* isolates from soil in Southeastern pecan orchards (Assay 3, Trial 1)^a.

Isolate	Days Post Inoculation										Average ^b
	7	8	9	10	11	12	13	14			
Control	3.3±3.3a	3.3±3.3a	3.3±3.3a	6.7±3.3a	6.7±3.3a	6.7±3.3a	6.7±3.3a	10.0±5.8a	4.6±0.89bc		
Mycotrol®	0±0a	0±0a	3.3±3.3a	3.3±3.3a	3.3±3.3a	3.3±3.3a	3.3±3.3a	3.3±3.3a	1.54±0.59d		
BbAR1	0±0a	0±0a	0±0a	0±0a	0±0a	0±0a	3.3±3.3a	6.7±6.7a	0.77±0.57d		
BbGA1	3.3±3.3a	3.3±3.3a	3.3±3.3a	3.3±3.3a	10.0±5.8a	13.3±3.3a	13.3±3.3a	13.3±3.3a	5.90±1.08b		
BbGA2	13.3±3.3a	13.3±3.3a	13.3±3.3a	13.3±3.3a	13.3±3.3a	13.3±3.3a	13.3±3.3a	16.7±6.7a	9.74±1.19a		
BbMS1	13.3±6.7a	13.3±6.7a	13.3±6.7a	10.0±10.0a	16.7±8.8a	20.0±11.5a	20.0±11.5a	23.3±12.0a	12.31±2.16a		
BbMS2	3.3±3.3a	3.3±3.3a	3.3±3.3a	3.3±3.3a	3.3±3.3a	3.3±3.3a	3.3±3.3a	10.0±5.8a	2.82±0.82cd		
BbMS3	3.3±3.3a	3.3±3.3a	16.7±6.7a	16.7±6.7a	16.7±6.7a	16.7±6.7a	20.0±5.8a	20.0±5.8a	8.72±1.73ab		

^a Numbers followed by different letters within each column are statistically different ($\alpha = 0.05$). No significant differences were detected 5-7 d post inoculation (data not shown).

^b Average of observations 5-14 d post inoculation.

Table 2. Mean percentage (se) of *Curculio caryae* larvae infected with *Beauveria bassiana* isolates from soil in southeastern pecan orchards (Assay 3, trial 2)^a.

Isolate	Days Post Inoculation							Average ^b
	7	10	11	12	13	14	17	
Control	3.3±3.3b	6.7±6.7a	6.7±6.7a	6.7±6.7a	6.7±6.7a	6.7±6.7a	16.0±12.0a	6.1±1.7e
Mycotrol®	3.3±3.3b	13.3±13.3a	16.7±12.0a	23.3±13.3a	23.3±13.3a	26.7±12.0a	26.7±12.0a	13.3±3.0c
BbAR1	0±0b	3.3±3.3a	6.7±3.3a	6.7±3.3a	10.0±0a	16.7±3.3a	33.3±12.0a	7.0±2.0de
BbGA1	0±0b	6.7±6.7a	6.7±6.7a	16.7±8.8a	26.7±8.8a	36.7±8.8a	46.7±13.3a	12.7±3.3cd
BbGA2	13.3±3.3a	23.3±8.8a	23.3±8.8a	30.0±5.8a	33.3±3.3a	33.3±3.3a	60.0±5.8a	23.3±3.0a
BbMS1	0±0b	6.7±3.3a	10.0±5.8a	13.3±6.7a	16.7±8.8a	33.3±8.8a	56.7±8.8a	12.4±3.3cd
BbMS2	0±0b	13.3±8.8a	33.3±3.3a	36.7±3.3a	50.0±5.8a	50.0±5.8a	60.0±5.8a	22.1±4.2b
BbMS3	6.7±3.3ab	13.3±8.8a	13.3±8.8a	16.7±12.0a	23.3±14.5a	23.3±14.5a	33.3±20.3a	12.7±3.1c

^a Numbers followed by different letters within each column are statistically different ($\alpha = 0.05$). No significant differences were detected 5-6 d post inoculation (data not shown).

^b Average of observations 5-17 d post inoculation.

Table 3. Mean percentage (\pm se) of *Curculio caryae* larvae infected with *Beauveria bassiana* or *Metarhizium anisopliae* isolates from soil in Southeastern US pecan orchards (Assay 4) ^a.

Isolate	Days Post Inoculation							Average
	5	6	7	8	12	13	14	
Control	4.0 \pm 2.6a	5.7 \pm 2.6bc	8.1 \pm 4.6bc	9.8 \pm 5.0bc	14.8 \pm 4.9cd	16.4 \pm 5.5d	22.1 \pm 5.1d	11.5 \pm 1.8c
Mycotrol®	1.7 \pm 1.7a	3.3 \pm 3.3c	3.3 \pm 3.3c	3.3 \pm 3.3c	10.7 \pm 5.2d	15.7 \pm 6.1d	25.7 \pm 12.4d	9.5 \pm 3.5c
BbMS1	3.3 \pm 2.1a	5.0 \pm 3.4bc	6.7 \pm 4.9bc	11.7 \pm 7bc	34.8 \pm 12.3bc	39.5 \pm 10.4c	46.7 \pm 9.3bc	21.1 \pm 3.9b
MaLA5	6.7 \pm 3.3a	6.7 \pm 4.2bc	12.4 \pm 4.8bc	14.8 \pm 4.1ab	33.8 \pm 10.9bc	40.2 \pm 8.6bc	46.7 \pm 8.6bc	23.0 \pm 3.4b
MaLA7	3.3 \pm 2.1a	5.0 \pm 3.1bc	5.0 \pm 3.4c	11.4 \pm 2.7bc	51.0 \pm 7.0b	60.7 \pm 9.2ab	60.7 \pm 9.2abc	28.2 \pm 4.5b
MaLA8	6.7 \pm 3.3a	6.7 \pm 3.3bc	6.7 \pm 3.3bc	10.0 \pm 0abc	30.0 \pm 0bc	40.0 \pm 0bc	50.0 \pm 0bc	21.4 \pm 3.9b
MaLA6	1.7 \pm 1.7a	10.0 \pm 6.3bc	13.3 \pm 8.0bc	19.0 \pm 8.6ab	40.5 \pm 12.4b	51.0 \pm 10.8bc	54.3 \pm 12.3bc	27.1 \pm 4.5b
BbLA1	1.7 \pm 1.7a	5.7 \pm 2.6bc	5.7 \pm 2.6bc	10.7 \pm 5.2bc	51.4 \pm 10.1b	53.8 \pm 10.6bc	64.3 \pm 8.3ab	27.6 \pm 4.6b

^a Numbers followed by different letters within each column are statistically different ($\alpha = 0.05$).

Table 4. Mean percentage (se) of *Curculio caryae* larvae infected with *Beauveria bassiana* isolates from soil in Southeastern pecan orchards (Assay 5)^a.

Isolate	Days Post Inoculation										Average ^b
	8	9	10	11	12	13	14	15			
Control	3.3±3.3.3c	6.7±3.33bc	13.3±3.3b	16.7±3.3abc	16.7±3.3bc	16.7±3.3bc	16.7±3.3b	20.0±0.0c	20.0±0.0c	9.0±1.3d	
Mycotrol®	6.7±3.3bc	6.7±3.3bc	6.7±3.3bc	6.7±3.3cd	6.7±3.3cd	20.0±5.8bc	20.0±5.8b	20.0±5.8c	7.6±1.4d		
BbMS1	23.3±3.3a	33.3±8.8a	40.0±5.8a	40.0±5.8a	46.7±8.8a	53.3±6.7a	56.7±3.3a	73.3±13.3a	32.6±3.3a		
BbGA3	16.7±6.7ab	16.7±6.7ab	16.7±6.7ab	16.7±6.7abc	16.7±6.7bc	16.7±6.7bc	16.7±6.7b	16.7±6.7c	14.0±1.6c		
BbGA4	10.0±4.5abc	8.3±4.8bc	11.7±4.8bc	16.7±4.9bc	15.0±5.6bc	18.3±6.0bc	20.0±6.3b	26.7±5.8bc	10.7±1.4d		8
BbGA6	18.3±4.0ab	18.3±4.01ab	21.7±5.4ab	25.0±5.6ab	33.3±4.9ab	41.7±5.4ab	45.0±5.6a	48.3±4.0b	21.7±1.9b		
BbGA7	3.3±3.3c	6.7±3.3bc	6.7±3.3bc	6.7±3.3cd	6.7±3.3cd	13.3±8.8c	20.0±10.0b	20.0±10.0c	6.7±1.5d		
BbGA8	0.0±0.0c	0.0±0.0c	0.0±0.0c	0.0±0.0d	0.0±0.0d	0.0±0.0d	0.0±0.0c	0.0±0.0d	0.0±0.0e		

^a Numbers followed by different letters within each column are statistically different ($\alpha = 0.05$). No significant differences were detected 5-7 d post inoculation (data not shown).

^b Average of observations 3-15 d post inoculation.

Table 5. Mean percentage (se) of *Curculio caryae* larvae infected with *Beauveria bassiana* or *Metarhizium anisopliae* isolates from soil in Southeastern pecan orchards (Assay 6)^a.

Isolate	Days Post Inoculation										Average ^b
	7	8	9	10	11	12	13	14			
Control	16.7±12.0b	16.7±12.0b	20.0±11.6bc	20.0±11.6bc	20.0±11.6bcd	20.0±11.6cd	20.0±11.6cd	23.3±14.5cd			15.4±2.6d
Mycotrol®	23.3±8.8ab	26.7±6.7ab	30.0±10.0ab	36.7±8.8a	46.7±12.0ab	46.7±12.0bc	46.7±12.0bc	46.7±12.0bc			28.2±3.4c
BbMS1	50.0±10.0a	53.3±8.8a	60.0±10.0a	63.3±6.7a	70.0±5.8a	96.7±3.3a	96.7±3.3a	96.7±3.3a			53.1±5.2a
BbLA2	20.0±5.8b	30.0±11.5b	30.0±11.6ab	30.0±11.6ab	33.3±8.8abc	33.3±8.8bc	33.3±8.8bcd	33.3±8.8cd			20.5±2.9d
BbLA3	33.3±3.3ab	33.3±3.3ab	53.3±12.0a	53.3±12.0a	53.3±12.0a	70.0±15.3b	73.3±12.0ab	76.7±14.5ab			42.1±4.2b
MalA2	0.0±0.0c	0.0±0.0c	6.7±3.3bc	10.0±5.8bc	13.3±8.8cd	16.7±8.8cd	16.7±8.8d	16.7±8.8cd			6.2±1.7d
MalA3	0.0±0.0c	0.0±0.0c	0.0±0.0c	0.0±0.0c	0.0±0.0d	0.0±0.0d	6.7±6.7cd	6.7±6.7d			1.0±0.7d

^a Numbers followed by different letters within each column are statistically different ($\alpha = 0.05$). No significant differences were detected between the control and fungal isolates 5-7 d post inoculation (data not shown).

^b Average of observations 3-14 d post inoculation.

	Days Post Inoculation					
Isolate	6	9	12	16	19	Average
Control	6.7±3.3a	13.3±3.3a	13.3±3.3a	23.3±3.3a	23.3±3.3b	16.0±2.1a
Ma	3.3±3.3a	10.0±3.4a	23.3±3.3a	56.7±6.7a	70.0±5.8a	32.7±7.3a

Control= no fungus applied, Ma=M. *anisopliae* culture MaLA4. Numbers followed by different letters within each column are statistically different ($\alpha = 0.05$, LSD). Rate of application was ca. 79,500 conidia per cm².

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Table 7. Fall armyworm larval mortality following exposure to fungal strains of *Beauveria bassiana* and *Metarhizium anisopliae*.

Fungus	Strain	First Instar Corrected % Mortality	Third Instar Corrected % Mortality
<i>B. bassiana</i>	30601	94.3%	85.9%
	30593	90.6%	82.6%
	30600	83.0%	80.7%
	GHA	90.6%	87.7%
<i>M. anisopliae</i>	30594	84.9%	82.6%